



MACALESTER (R.K.)

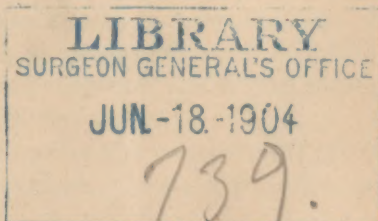
The Hydriatic Treatment of Pneumonia.

BY

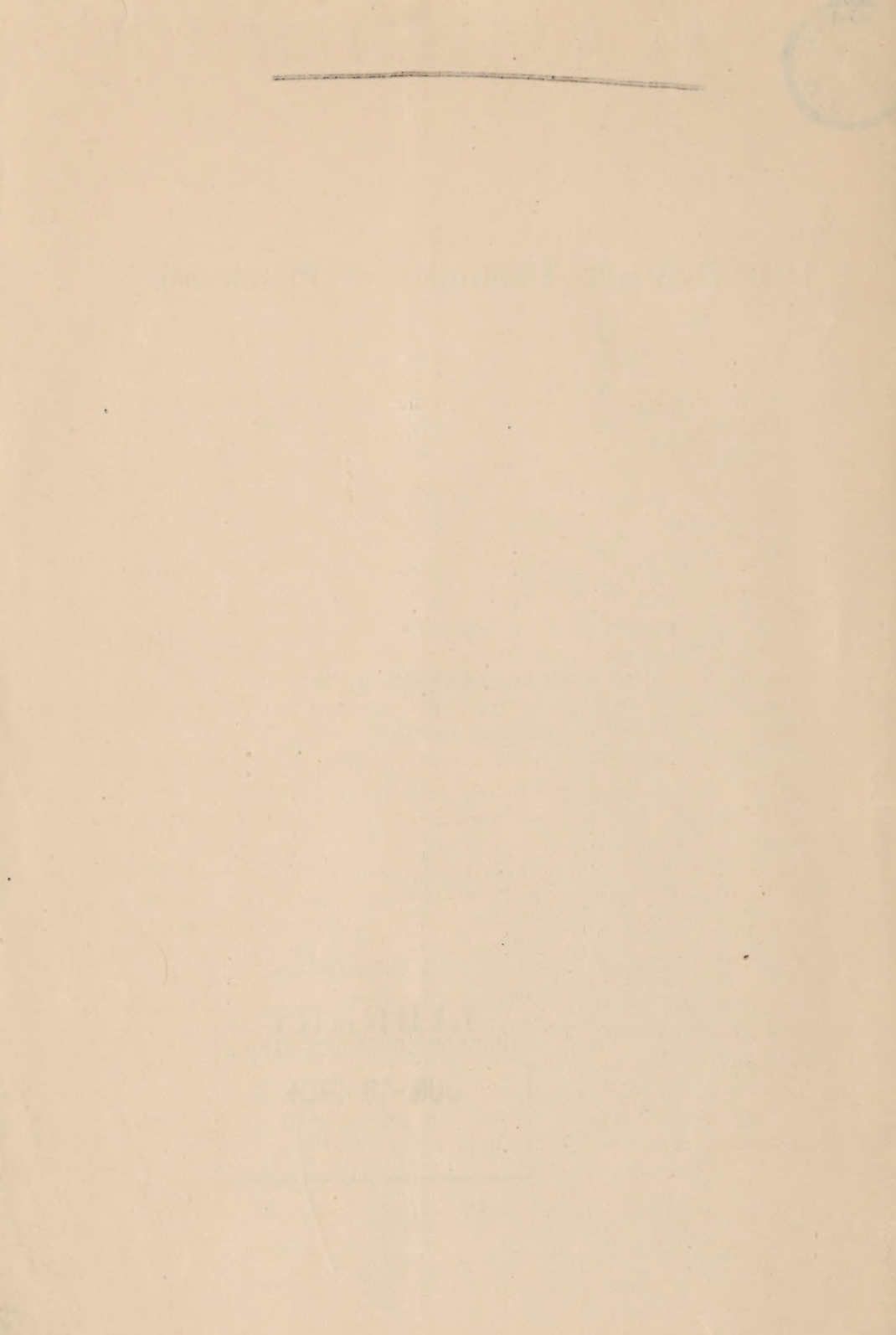
R. K. MACALESTER, M. D.

GLENWOOD SPRINGS.

Read before the Colorado State Medical Society.



1899.



THE HYDRIATIC TREATMENT OF PNEUMONIA.

BY R. K. MACALESTER, M. D., GLENWOOD SPRINGS.

In the limited time allotted to me for the discussion of hydrotherapy in pneumonia I shall endeavor to cover as much ground as possible by presenting in the form of a brief resumé the well established data of this rather extensive subject. Those wishing to familiarize themselves with details will find this branch of therapeutics elaborately treated in a recently published book by Dr. S. Baruch,* of New York, to whom, indeed, as to Winternitz in Europe, great credit is due for the development and propagation of hydrotherapeutics in this country. I was fortunate enough to have had instruction from both the aforementioned authorities, from which, as well as from their writings, I shall quote freely, without special reference, in the following.

Many observers of the widest experience in the treatment of pneumonia by various methods extol the virtues of hydrotherapy, and comparative *statistics* demonstrate its therapeutic efficiency. Thus, for instance, Dr. Fenwick of the London Hospital in an analysis of 1,000 cases of pneumonia met with failure in but 10% of those treated by various cold applications, whereas the mortality was double as great when other methods were employed. In the J. Hood Wright Memorial Hospital of New York the total mortality from pneumonia has been reduced over one-half since hydriatic treatment has been adopted. Penzoldt, from the experience of an enormous material of 2,200 cases of pneumonia in children, concludes that preference should always be given to a cautious bath treatment.

By first considering some of the *physiological effects* of cold applications to the body surface, we can best judge as to their

*S. Baruch: Hydrotherapy. N. Y., Wm. Wood & Co., 1898. See also: Hydrotherapy in the Pneumonia of Children, Med. News, Nov. 19, 1898; and Winternitz: Die Hydrotherapie auf physiol. and klin. Grundlage, Vienna and Leipsig, 1890.

applicability and to what extent they meet the therapeutic indications in pneumonia. A moderately cold application to the skin causes a primary contraction of the cutaneous vessels which is followed by a tonic active dilatation, in contrast to the passive hyperaemia produced by warm procedures (as, for instance, poultices). These latter relax the vasoconstrictors, giving rise to a stasis, whereas cold stimulates the vasodilators, producing an active hyperaemia with maintenance of vascular tone and improved circulation. Mild cold procedures—such as usually employed in pneumonia—act reflectively through stimulation of the cutaneous nerves upon the centers in the central nervous system and thence upon the functional activity of various organs. The respiratory system is stimulated and inspiration deepened. The effect on the circulatory system is stimulation of the heart action (evinced by more forcible ventricular contractions), and neurovascular excitation, in consequence of which arterial tension is raised and the blood propelled with greater velocity and force. The general condition is invigorated and refreshed, and cerebral activity stimulated. The secretory organs evince greater activity, the amount of secreted urine, for instance, increasing considerably. Owing to the compensatory powers of our body, internal temperature is not materially influenced in health.

By applying the foregoing data we shall see that the therapeutic requirements in pneumonia are thereby well fulfilled and that hydropathic treatment is based on a sound *rationale*.

The *therapeutic indications* are: “(1) To stimulate and invigorate the nerve centers, with a view to enhancing the patient’s vital powers; (2) to prevent and control heart failure; (3) to reduce temperature; (4) to eliminate toxins.” (Baruch.)

ad 1. The stimulating action of cold applications upon the nerve centers is reflected to organs of vital importance, upon whose functions the patient’s resisting powers to the toxic substances generated by the diplococcus pneumoniae of Fraenkel are dependent. Soon after applying cold the patient grows calmer, respiration deeper and more regular, dyspnoea is relieved, and expectoration facilitated. There is also improvement

of appetite and sleep and of the functions of the skin and kidneys.

ad 2. Heart failure, the most dreaded complication in pneumonia, is better averted by hydriatic measures than any other available means. The heart action is aided and maintained in the following manner: The active hyperaemia of the skin, following the rapid primary contraction of the cutaneous vessels, relieves the heart at once by broadening the stream in the cutaneous capillaries. At the same time arterial tension is raised, as proved by the better filling of the radial arteries, and a freed, unembarrassed pulmonic and systemic circulation is established. When we consider the enormous vascular area of the skin, estimated as being capable of holding 30 to 50 per cent. of the entire blood of the body, we can readily realize that this is a mighty source of depletion.

ad 3. The fact that pneumonia patients are extremely susceptible, and that their temperature may be easily reduced by cold procedures, necessitates great care and precaution in the application of such measures. Although high temperature may be an important element in pneumonia and other infectious diseases by imposing more work upon the heart and adding greatly to the patient's discomfort, still it is by no means the chief danger. As I have often insisted in discussing the matter, fever is but a symptom of disease, indicating the reaction on the part of our organism in its struggle to overcome the infective process. If vitality sinks so low as to offer no resistance to the toxæmia, there is no fever, and the patient collapses at once—an occurrence which we have all had occasion to observe in lethal cases of pneumonia. Therefore the indiscriminate administration of antipyretics, with a view of reducing temperature and thereby meeting the principal therapeutic indication, is as fallacious as is the idea so deeply rooted in the professional mind that the main attribute of hydrotherapy in febrile diseases is reduction of temperature.

ad 4. The support that cold applications give to the nervous system, raising the patient's vitality and the functional activity of various organs, is conducive to the elimination of toxins.

The hydiatric methods in pneumonia. Owing to the susceptibility of pneumonia patients to cold, the milder hydiatric procedures, such as the cold chest compress or the wet pack, are indicated in general. Furthermore, these are more easily applied and controlled, and are attended by less agitation, disturbance and exertion on the patient's part. In others' as well as in my own experience the milder measures are indeed quite adequate to fulfill all the therapeutic requirements in both the croupous and catarrhal pneumonias of adults.

The cold chest compress is preferable to other procedures in pneumonia—a conclusion I had reached independently some time ago, and which I now find is in harmony with the opinions of some others. Its correct application, as all hydiatric procedures, requires some experience and care, therapeutic failures being usually due to faulty technique. The chest compress is composed of three folds of linen or old muslin, cut in a manner to fit the entire chest from above the clavicles down to the umbilicus, with slits in the axillary region to form flaps and cover the shoulders. It is then wrung out of water, so that it does not drip, at the temperature of 60° F., snugly applied around the thorax, covered with a piece of closely woven thin flannel of the same shape but at least an inch wider in all directions, and secured by safety pins. At first the application is changed every half hour, then every hour or two until the patient's temperature is below 100° when it may be discontinued. The compress should not be covered with oiled silk—a very popular proceeding on the part of attendants for the sake of convenience and protection of the patient's bed and clothing—as this would convert it into a poultice and deprive it of its stimulating and gradually cooling action.

The wet pack, at the temperature of 60° to 70° F., being a somewhat more severe procedure than the chest compress, is indicated in the graver forms of pneumonia with high temperature. It is a very popular and efficacious method, has warm advocates, and deserves special mention.*

* While I was attending Professor Winternitz's clinic in Vienna, this method was employed extensively in pneumonia with excellent results.

Other hydiatric methods in pneumonia, advocated by prominent observers, are: Cold full baths, temperature 60° to 70° F.; tepid baths, 90° to 92.5° F., both with or without friction and ablutions; ice-packs; the ice cradle; cold sponging, etc.

In the *pneumonia of children*, the same methods as enumerated in the foregoing for adults are employed in somewhat modified form. The child's sensitive nervous organization, with its greater susceptibility to cold and to the development of nervous symptoms and the minor resisting powers of the heart as compared with the adult's, render sound judgment in prescribing, and extreme care in the application of, hydiatric procedures imperative.

In my experience, based on the observation of a considerable material treated during my practice in New York, the cold chest compress alone proved a reliable and adequate remedy in the vast majority of cases. For children under three years of age Baruch favors tub baths of five to eight minutes' duration, with continuous friction at the temperature of 95° gradually reduced to 85° or 80° F. according to the body temperature, whereas in older ones preference is given the cold chest compress. He also recommends the copious administration of cold water at regular intervals in the pneumonia of both children and adults, and I need scarcely add that a hygienic regime should be strenuously adhered to.

Epicrisis. The virtues of hydrotherapeutics, being based on sound principles and scientific clinical evidence, entitle them as much to adoption by the profession at large as do the popular medicinal remedies in routine practice. I do not presume to say that drugs can be dispensed with; they have their place and field of usefulness; but their prolonged administration is often depressive to the one or other organ, is toxic or nauseating, etc., and they do not always fulfill the requirements of judicious treatment. In support of this view, and in connection with the pneumonia of children, allow me to detail an illustrative case from my past experience:

H. R., a well developed girl, $3\frac{1}{2}$ years old, was taken ill after measles with pneumonia five days previous to my first visit. I

saw at a glance that her condition was very serious, and on examination found the entire lower and middle lobe of the right lung consolidated. The temperature was 103.2° , the pulse scarcely appreciable, approximately 160, the breathing rapid, superficial and obstructed; the lips and extremities were markedly blue from cyanosis, and the child lay there failing fast, somnolent, and at times agitated. On enquiry I ascertained that she had been given various kinds of medicines, all of which were inefficacious and promptly ejected, during the last two days, and it was with difficulty that any nourishment could be retained. I demonstrated to the parents how to use the cold chest compress by applying the first one myself, prescribed a simple expectorant, and waited to observe the result. In about an hour improvement began. The cyanosis disappeared, the pulse became stronger and slower, the respiration deepened, cough and expectoration set in, consciousness returned, and, in short, the child was actually resuscitated. Shortly afterward she fell into a peaceful sleep. From then on she progressed uninterruptedly and was convalescent two days later.

In conclusion, I venture to state that anybody who has witnessed a few such transformation scenes as the one just described, resulting from the correct application of water after medicinal agents have proved futile, will become a convert to hydrotherapy.